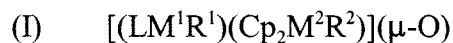


Listing of the Claims:

The following is a complete listing of all the claims in the application, with an indication of the status of each:

1. (Original) A binuclear, oxygen-bridged, bimetallic complex of the general formula I:



where:

M^1 = Al, Ge, Zr or Ti;

M^2 = Zr, Ti, or Hf;

Cp = cyclopentadienyl;

R^1, R^2 = H'; C(1-6) alkyl; halogen; aryl; SiMe₃; and alkaryl where aryl = C₆H_{5-n}X_n

X = halogen, C(1-6) alkyl, aryl NO₂, SO₃H, NR₂³, where R³ = C(1-6) alkyl or H and n = 0 to 5; and

L = a bidentate, doubly heteroatom-coordinated organochemical ligand which together with the metal M¹ forms a 5- or 6-membered ring.

2. (Currently amended) The binuclear, oxygen-bridged, bimetallic complex as claimed in claim 1, in which

R^1, R^2 = methyl, ethyl, i-propyl, t-butyl, halogen, phenyl, alkylphenyl, and SiMe₃, and

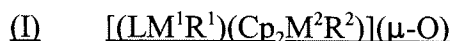
L is a bidentate, doubly nitrogen-coordinated organochemical ligand which, together with the metal M¹, forms the [[a]] 5- or 6-membered ring.

3. (Currently amended) The binuclear, oxygen-bridged, bimetallic complex as claimed in claim 1, ~~characterized in that it is a heterobimetallic complex,~~ preferably on in which wherein M¹ = Al aluminum and M² = Zr zirconium, more preferably a complex of the formula [(LA1Me)[Cp₂Zr R²]](O), where R² is Me or Et.

4-5. (Canceled)

6. (Currently amended) A process for preparing a binuclear, oxygen-bridged,

bimetallic complex of the general formula I:



where:

$M^1 = Al, Ge, Zr$ or Ti ;

$M^2 = Zr, Ti$, or Hf ;

Cp = cyclopentadienyl;

$R^1, R^2 = H^+$; C(1-6) alkyl; halogen; aryl; $SiMe_3$; and alkaryl where aryl = $C_6H_{5-n}X_n$

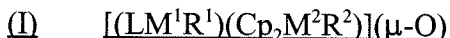
$X =$ halogen, C(1-6) alkyl, aryl NO_2 , SO_3H , NR^3_2 , where $R^3 =$ C(1-6) alkyl or H and $n = 0$ to 5 ; and

L = a bidentate, doubly heteroatom-coordinated organochemical ligand which together with the metal M^1 forms a 5- or 6-membered ring,

~~comprising the step of reacting as claimed in claim 1 characterized in that a precursor complex of the formula $LM^1R^1(OH)$ is reacted with a metallocene precursor complex $[(,)]$ selected from $Cp_2M^2(R^2)_2$ or $Cp_2M^2MeR^2$ or Cp_2M^2HX'' where X'' is a halogen, where $x =$ halogen, preferably in an inert solvent.~~

7. (Currently amended) A catalyst preparation for the polymerization of olefins which comprises

at least one complex ~~as claimed in claim 1~~ of the general formula I:



where:

$M^1 = Al, Ge, Zr$ or Ti ;

$M^2 = Zr, Ti$, or Hf ;

Cp = cyclopentadienyl;

$R^1, R^2 = H^+$; C(1-6) alkyl; halogen; aryl; $SiMe_3$; and alkaryl where aryl = $C_6H_{5-n}X_n$

$X =$ halogen, C(1-6) alkyl, aryl NO_2 , SO_3H , NR^3_2 , where $R^3 =$ C(1-6) alkyl or H and $n = 0$ to 5 ; and

L = a bidentate, doubly heteroatom-coordinated organochemical ligand which together with the metal M^1 forms a 5- or 6-membered ring, and

at least one cocatalyst.

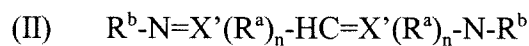
8. (Currently amended) The catalyst preparation as claimed in claim 7, ~~characterized in that~~ wherein the at least one cocatalyst is an alkyl-aluminoxane;

~~preferably methalaluminoxane (MAO).~~

9-11. (Canceled)

12. (New) The binuclear, oxygen-bridged bimetallic complex as claimed in claim 3 wherein R^2 is Me or Cl.

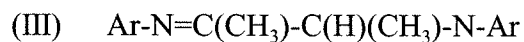
13. (New) The binuclear, oxygen-bridged, bimetallic complex as claimed in claim 1 wherein the ligand L is defined by formula II:



where $X' = C$ or P ; and

$R^a, R^b = R^1$, and $n = 1$ when $X = C$, and $n = 2$ when $X = P$.

14. (New) The binuclear, oxygen-bridged, bimetallic complex as claimed in claim 1 wherein the ligand L is defined by formula III:



where Ar is an aryl.

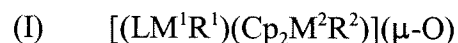
15. (New) The binuclear, oxygen-bridged, bimetallic complex as claimed in claim 14 where in Ar is 2, 6- $iPr_2C_6H_3$ where iPr is isopropyl.

16. (New) The method of claim 6 wherein said reacting step is performed in an inert solvent.

17. (New) The catalyst preparation of claim 8 wherein said alkyl-aluminoxane is methylaluminoxane.

18. (New) A method of catalytically polymerizing polymers, comprising the steps of:

combining materials to be polymerized with a binuclear, oxygen-bridged, bimetallic complex of the general formula I:



where:

M^1 = Al, Ge, Zr or Ti;

M^2 = Zr, Ti, or Hf;

Cp = cyclopentadienyl;

$R^1, R^2 = H'$; C(1-6) alkyl; halogen; aryl; $SiMe_3$; and alkaryl where aryl = $C_6H_{5-n}X_n$

X = halogen, C(1-6) alkyl, aryl NO_2 , SO_3H , NR^3_2 , where $R^3 = C(1-6)$ alkyl or H and n = 0 to 5; and

L = a bidentate, doubly heteroatom-coordinated organochemical ligand which together with the metal M^1 forms a 5- or 6-membered ring, and

polymerizing the materials using said binuclear, oxygen-bridged, bimetallic complex as a catalyst.

19. (New) The method of claim 18 wherein said combining step includes the step of adding an alkyl-aluminoxane, trialkylaluminum, or alkylhaloaluminum cocatalyst to said materials and said binuclear, oxygen-bridged, bimetallic complex.

20. (New) the method of claim 19 wherein said cocatalyst is methylaluminoxane.